

Abstract of the Disclosure

This invention relates to a method of bonding a metallic membrane with metallic part involving pressing a smooth surface of the metallic membrane against the smooth surface of the metallic part, and heating the metallic membrane and metallic part to a temperature above the half melting point of the metallic membrane while subjecting the metallic membrane and metallic part to a controlled environment of a proper gas atmosphere. The metallic membrane can comprise palladium and the pressurized gas can comprise one of hydrogen, an inert gas or their mixture.